



U. S. Chemical Safety and Hazard Investigation Board RECOMMENDATIONS STATUS CHANGE SUMMARY

Report:	Freedom Industries Chemical Release
Recommendation Number:	2014-01-I-WV-R2
Date Issued:	September 28, 2016
Recipient:	American Water Works Company, Inc. (AWWC)
New Status:	Open – Acceptable Response or Alternate Response
Date of Status Change:	March 24, 2017

Recommendation Text:

Establish requirements for all American Water state utilities' surface water treatment plants to undertake the following activities:

- 1. Conduct an inventory of all hazardous chemicals or classes of hazardous chemicals that are considered a potential source of significant contamination stored in the utility's most vulnerable source water protection area (e.g., Zone of Critical Concern). Chemicals may be identified by accessing publicly available information, which may include Tier II reporting forms submitted to local emergency planning committees and electronically available information from federal, state or local databases.*
- 2. For each inventoried chemical or class of chemicals, conduct a prioritized assessment to determine if existing analytical methods are available to detect the presence and/or concentration of the chemical or class of chemicals in the event of a release to the water supply and if the chemical or class of chemicals is capable of being treated or removed by the utility's water treatment process.*
- 3. For all chemicals or classes of chemicals that are not capable of being treated or removed by the treatment process, develop a contingency plan to respond to contamination events (e.g., as modeled by WVAW's Kanawha Valley Water System June 2016 Source Water Protection Plan).*

Board Status Change Decision:

A. Rationale for Recommendation

On January 9, 2014, aboveground storage tanks (ASTs) at Freedom Industries, Inc. (Freedom), in Charleston, West Virginia, were found to have leaked approximately 10,000 gallons of Shurflo 944, a mixture of crude methylcyclohexane methanol (MCHM) and polyglycol ethers (PPH, stripped), through two small holes on the tank floor. The secondary containment or dike wall, had cracks and holes from disrepair that allowed the tank contents to escape the containment and find a pathway to the Elk River. Once in the river, the the tank contents flowed downstream to the intake of the West Virginia American Water (WVAW) water treatment facility about 1.5 miles down-river from Freedom. The evening of January 9, 2014, WVAW issued a Do Not Use (DNU) order for 93,000 customer accounts (approximately 300,000 residents) across a portion of nine counties.

The US Chemical Safety and Hazard Investigation Board's (CSB's) investigation found several issues related to identifying and assessing hazardous chemicals stored near water treatment intakes. The Freedom incident highlighted the need for water utilities to be aware of what chemicals or classes of chemicals are around their water intakes. Within West Virginia this issue has been addressed through Tank Bill 373 and 423 and the enhancements within the Source Water Assessment Program. However, other states may not have such extensive requirements specific to source water planning. The American Water Works Company (AWWC) has water utilities throughout the U.S. and has the ability to influence safety by implementing programs similar to those implemented at WVAW at its other state subsidiaries.

B. Response to the Recommendations

AWWC has provided the CSB with information relating to its actions to satisfy the intent of the CSB's recommendation. The following describes AWWC's actions on the three parts of the recommendation:

1. *Conduct an inventory of all hazardous chemicals or classes of hazardous chemicals that are considered a potential source of significant contamination stored in the utility's most vulnerable source water protection area (e.g., Zone of Critical Concern). Chemicals may be identified by accessing publicly available information, which may include Tier II reporting forms submitted to local emergency planning committees and electronically available information from federal, state or local databases.*

AWWC has implemented the use of WaterSuite, a cloud-based geographic information system used by AWWC water utilities, to assess potential contaminant sources and chemicals in the zone of critical concern. The program uses not only publically available information, as recommended in the CSB's recommendation language, but also uses aerial and satellite images for evidence of facilities that might house chemicals and other hazards that may not be easily identified through government databases. AWWC has implemented WaterSuite at 81 of the 82 AWWC surface water intakes during 2015 and 2016 (one recently acquired intake will implement during 2017).

2. *For each inventoried chemical or class of chemicals, conduct a prioritized assessment to determine if existing analytical methods are available to detect the presence and/or concentration of the chemical or class of chemicals in the event of a release to the water supply and if the chemical or class of chemicals is capable of being treated or removed by the utility's water treatment process.*

AWWC is following guidance for the continuous monitoring of seven classes of contaminants identified in West Virginia Senate Bill 373. The identification of these seven parameters was recommended by the U.S. Environmental Protection Agency for detecting contamination in drinking water and includes: pH, temperature, oxidation/reduction potential (ORP), turbidity, total organic carbon (TOC) via ultraviolet light absorption, conductivity, and free chlorine. Collectively, these monitor for changes in water quality including the detection of: salts or ions, metals (including heavy metals), polar organic compounds, nonpolar organic compounds, pesticides, and biotoxins. AWWC has implemented this continuous monitoring at all 82 of the surface water treatment plants operated by AWWC state utilities. During 2017, the systems will be collecting baseline data in order to create information to which changes in baselines can be used to detect potential contamination.

3. *For all chemicals or classes of chemicals that are not capable of being treated or removed by the treatment process, develop a contingency plan to respond to contamination events (e.g., as modeled by WVAV's Kanawha Valley Water System June 2016 Source Water Protection Plan).*

Each water utility within AWWC uses National Incident Management System (NIMS) and U.S. EPA guidance as a framework for contamination events. AWWC stated that the 74 water utilities within AWWC outside of West Virginia are in the process of reviewing the Source Water Protection Plans of the WVAV system and developing strategies to review and, as needed, update their plans, during 2017.

C. Board Analysis and Decision

As AWWC has made progress towards the actions specified in the recommendation, the Board voted to designate **Recommendation No. 2014-01-I-WV-R2** with the status **"Open – Acceptable Response or**

Alternate Response.” Closure of this recommendation will be contingent upon completion of updated contingency planning for the 74 utilities in AWWC outside West Virginia.